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ABSTRACT

This paper examines the prediction of college grades for a national sample of black students attending a variety of predominantly black and predominantly white colleges. The sample included black collegians (477 men and 837 women) who had been nominated by their high schools for participation in the first annual National Achievement Scholarship Program and who responded to a 1966 followup survey, following their freshman year of college. When men and women were grouped in five types of colleges, statistically significant correlations were found between scores on the National Merit Scholarship Qualifying Test (NMSQT) and freshman grades. The most striking result was the inverse relationship between average college grades and average NMSQT scores. In general, students in the largely black colleges had lower NMSQT scores but received higher freshman grades, while the opposite pattern prevailed at primarily white colleges. (Author/AF)

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Differential Expectations? Predicting Grades for Black Students in Five Types of Colleges

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ABSTRACT

This paper examines the prediction of college grades for a national sample of black students attending a variety of colleges, both predominantly black and predominantly white. The sample included black collegians (477 men and 837 women) who had been nominated by their high schools for participation in the first annual National Achievement Scholarship Program and who responded to a 1966 followup survey, following their freshman year of college. When men and women were grouped in five types of colleges, statistically significant correlations were found between scores on the National Merit Scholarship Qualifying Test (NMSQT) and freshman grades. Several of the relationships were modest, particularly within the highly selective colleges. For the typical black student considering college these results demonstrate that the level of performance he might expect to achieve is a joint function of his level of educational development (e.g., NMSQT) and the type of college he chooses to attend.

DIFFERENTIAL EXPECTATIONS? PREDICTING GRADES FOR BLACK STUDENTS IN FIVE TYPES OF COLLEGES

Fred H. Borgen

As the number of minority students in higher education has increased in recent years, there has been growing controversy about the use of tests with educationally disadvantaged students. This controversy has centered on the issue of whether standardized tests should be used by colleges for admission of black and other minority students (e.g., Stanley, 1970). Less consideration has been given to the implications of test scores for the individual black student. What use are academic aptitude test scores for the black student looking ahead to college? How can the student and his counselor use such information for college planning?

Although a few American colleges are undergoing major structural changes, many observers see the need for more rapid and more profound reform throughout academia. There are demands that colleges reduce their heavy reliance on admission tests, that curricula be radically restructured, and that college grading be abolished. If some of these changes should occur with sufficient impact then, indeed, the prediction of college grades would become a pointless exercise (Kendrick and Thomas, 1970). But for now, most of these calls for change represent agenda rather than actuality. On the whole, American colleges use meritocratic measures for admissions, differ greatly with respect to the academic preparedness of their students, and retain grading as a central feature of academic life. Moreover, these features apply to blacks as well as whites (Borgen, 1970). As long as these conditions persist, most people concerned with college admissions will want to consider the implications of traditional meritocratic measures for the prediction of college performance.

The empirical evidence (see reviews by Kendrick et al., 1970 and Stanley, 1970) shows that academic aptitude tests predict college grades as well for students in predominantly black colleges as they do for white students. The research literature reflects some ambiguity, however, about the validity of aptitude tests for predicting grades of black students in predominantly white colleges, although there have been few published studies on this topic. One study (Cleary, 1968) showed that tests could predict grades of blacks in predominantly white colleges. On the other hand, Clark and Plotkin's (1963) widely quoted study suggested that the Scholastic Aptitude Test (and presumably similar tests) was not a valid predictor for black students in largely white colleges. To date this is the only major empirical study which has seriously questioned the predictive validity of test scores with blacks.

Although Clark and Plotkin's conclusions seem to have had major influence, it is possible that their negative findings may have been a methodological artifact. Since they combined students attending a diverse group of colleges, their broad analysis may have obscured predictive relationships within individual colleges, or within similar types of colleges.

The purpose of this paper is (1) to examine the validity of a widely used test of educational development for predicting college grades for a national sample of black students attending a variety of colleges, both predominantly black and predominantly white, and (2) to consider the differential predictive implications of test scores within different types of colleges.

METHOD

SAMPLE

In a national competition, 4,288 black high school seniors (1964-65) were nominated by their high school principals for participation in the first annual National chievement Scholarship Program. In the summer of 1966, one year following high school graduation, these participants were mailed a questionnaire asking about their college progress (Burgdorf, 1969; Borgen, 1970), including their freshman grade point average (GPA).

The sample was restricted to those students with complete information on all relevant variables: high school rank (HSR); National Merit Scholarship Qualifying Test composite score (NMSQT; Science Research Associates, 1964); information concerning the four-year college attended; and the student's followup report of college GPA. Consequently, the total sample for this study was reduced to 477 men and 837 women. Sample attrition was due mainly to the 69% followup response rate and to the fact that NMSQT scores, which were not used for advancement in the scholarship competition, could be located for only 60% of the sample. More women than men appeared in the sample because they were more frequently nominated by their high schools (62% vs. 38%) and somewhat more likely to return the followup questionnaire (73% vs. 65%).

This sample is not representative of all black students in American colleges, but the sample is adequate for examining the relationship between precollege characteristics and college performance for a national sample of black students. The major analyses of this study follow the regression model, which allows one to look at the form of relationships, even though the strength of such relationships, as measured by correlation, may vary when the characteristics of the sample change.

TYPES OF COLLEGES

Colleges were classified as largely black or white (McGrath, 1965), with black schools further classified as either public or private. White institutions were

grouped to reflect the academic ability of their student populations. Astin's (1965) selectivity index is a ratio of the number of high ability students planning to attend a college to the number of students actually admitted. The validity of this index with respect to black colleges is questionable because very few black students were included in the samples used to derive the index. Aside from this question of validity, the index lacks utility for differentiating largely black colleges since nearly all have the same score (the lower limit of 37). This result is contrary to the evidence (cf., Jencks and Reisman, 1968) of major differences among black colleges along several dimensions, including the measured aptitudes of their students.

The selectivity index was used as follows to group white colleges: 37 to 54, low selectivity; 55 to 62, moderate selectivity; and 63 to 81, high selectivity. Schools classified as highly selective represent the top 10% of all colleges on the selectivity dimension, the moderately selective the next 20%, and the low selectivity colleges are scattered throughout the lower 70%. Thus these cutoff points for levels of selectivity are somewhat arbitrary and are chosen, in part, to provide adequate numbers of students within each type of college. Few of the black students in this sample attended predominantly white colleges considered nonselective by an absolute standard.

Table 1

Characteristics of Students in Five Types of Colleges

			HSR		NMSQT		GPA	
College Type	Sex	N	M	SD	M	SD	M	SD
Predominantly Black	Males	124	91.3	11.5	89.3	18.0	5.77	1.78
	Females	353	94.8	6.7	89.6	19.3	6.22	1.67
Public	Males	41	88.9	12.2	78.9	21.0	5.95	1.95
	Females	147	94.8	5.0	84.7	18.6	6.63	1.73
Private	Males	83	92.5	11.0	94.3	13.9	5.69	1.70
	Females	206	94.8	7.8	93.0	19.2	6.14	1.63
Predominantly White	Males	353	89.9	12.5	111.5	16.5	4.80	1.83
	Females	484	92.3	10.5	107.7	17.0	5.06	1.74
Low Selectivity	Males	75	87.1	14.8	101.9	16.0	4.88	1.96
	Females	175	92.2	7.8	100.3	15.1	5.08	1.63
Moderate Selectivity	Males	117	89.9	11.2	107.0	15.6	4.84	1.94
	Females	163	91.4	12.3	104.2	15.1	5.12	1.93
High Selectivity	Males	161	91.3	12.2	119.2	13.7	4.73	1.68
	Females	146	93.4	11.0	120.5	13.9	4.97	1.66
All Colleges	Males	477	90.3	12.3	105.7	19.5	5.05	1.86
	Females	837	93.4	9.2	100.0	20.1	5.55	1.81

RESULTS

Table 1 indicates the substantial differences among the black students attending the five types of colleges. The most striking difference is the inverse relationship between average college grades and average NMSQT scores. In general, students in the largely black colleges had lower NMSQT scores but received higher freshman grades, while the opposite pattern prevailed for primarily white colleges. This paradoxical situation plays havoc with any attempt to predict freshman grades for a national sample of students attending all types of colleges. In fact, the obtained correlation between GPA and NMSQT when black students in all colleges were combined was .03.

Nevertheless, it is conceivable--given the strong inverse relationship between average grades and average NMSQT--that a significant predictive relationship could be masked within specific colleges or within general types of colleges. Although these data were not adequate to examine prediction within single colleges, an analysis was conducted separately for the five types of colleges. The results, predicting GPA from HSR and NMSQT, are shown in Table 2. (The zero-order correlations cannot be

Table 2

Prediction of GPA in Five Types of Colleges

College Type	Sex	Correlations with GPA		Standard Regression Coefficients		R
		HSR	NMSQT	HSR	NMSQT	
Predominantly Black	Males	.188*	.203*	.185	.200	.275**
	Females	.151**	.290**	.134	.282	.319**
Public	Males	-.048	.538**	.055	.548	.541**
	Females	.093	.378**	.062	.373	.383**
Private	Males	.354**	.016	.354	-.006	.354**
	Females	.186**	.261**	.173	.252	.313**
Predominantly White	Males	.148**	.162**	.140	.155	.214**
	Females	.075*	.194**	.059	.189	.203**
Low Selectivity	Males	.138	.117	.129	.106	.174
	Females	.146*	.279**	.102	.262	.297**
Moderate Selectivity	Males	.003	.340**	.009	.340	.340**
	Females	.082	.322**	.086	.323	.333**
High Selectivity	Males	.281**	.115	.286	.126	.308**
	Females	.016	.085	.011	.084	.086
All Colleges	Males	.164**	.030	.164	.028	.166**
	Females	.134**	.058	.134	.057	.146**

* $p < .05$.

** $p < .01$.

used for comparing the relative effectiveness of HSR versus NMSQT for predicting college grades for blacks (Thomas and Stanley, 1969); HSR variability is sharply restricted since all of the students were nominated by their high schools for participation in the scholarship competition.)

This approach demonstrates the significant predictive validity of the NMSQT with black students attending a variety of colleges. Correlations between NMSQT and GPA are statistically significant for 10 of 14 cases when men and women are examined separately and significant within all five types of colleges for men and women combined. Most of these predictive relationships are modest, reflecting both the usual limitations of academic aptitude tests and also the probable attenuation due to grouping quite diverse colleges within these major types.

Figure 1 shows regression lines predicting grades from NMSQT for men and women in the five types of colleges. This kind of graphic display should be helpful in clarifying some predictive implications for a counselor working with black students making plans for college. In general, the regression lines are roughly parallel though at different elevations. From the viewpoint of the typical individual student this means that the college grades he can expect are a joint function of (a) his NMSQT score and (b) the type of college he chooses to attend. Thus, for example, a young man with an NMSQT score of 120 could expect to receive a grade of C+ at a highly selective white college but a grade of B+ at a public black college.

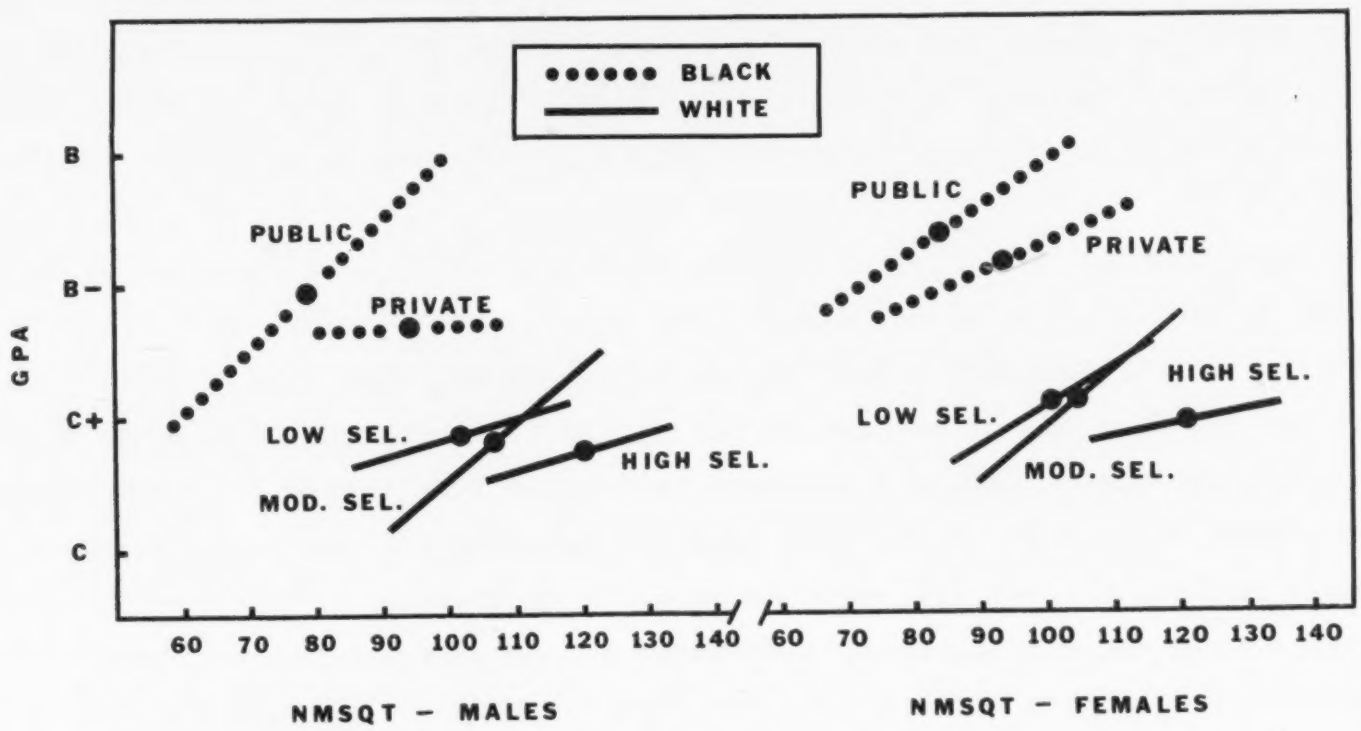

Fig. 1 Prediction of freshman GPA from NMSQT. (Solid circles indicate mean NMSQT and GPA; lines extend 1 SD above and below the NMSQT mean.)

DISCUSSION

The elevation and slope of a regression line are not affected by restrictions of range on the predictor variable (McNemar, 1962, p. 143). Consequently, it is likely that the regression lines shown in Figure 1 closely resemble the population regression lines for the respective types of colleges. Any deviations are probably due to simple random sampling error rather than any major biases in the sample. The accuracy of the regression line for males in private black schools should be questioned since it deviates so markedly from the pattern for all other schools, is based on a relatively small sample of 83, and is not consistent with previous research results. Clearly, this is one result which especially needs replication.

The remaining nine regression lines fit a consistent and predictable pattern. The pattern is similar for men and women, but with slightly higher elevation for women, who typically receive higher grades. Moreover, the height of the lines is consistently related to the expected difficulty levels of the five types of schools. Prediction of college grades within highly selective colleges was notably modest for both men and women.

One obvious question is: How do these regression lines, specifically for blacks, compare with the regression lines for whites in the same college environments? These results demonstrate at least minimal predictive validity for standardized aptitude tests with black students in a variety of colleges. To explore the additional question of test "bias" (cf., Cleary, 1968) would require examining the levels of the regression lines for blacks and whites in the same types of colleges. Although this study did not have data for both whites and blacks, an additional followup survey now underway will provide an opportunity to compare the regression lines for blacks and whites.

As noted earlier, Clark et al. (1963) have published an influential study casting doubt on the validity of tests for predicting grades of black students in largely white colleges. As Campbell (1964) points out, however, Clark and Plotkin's negative conclusions may have been a methodological artifact, due to the pooling of students in different colleges. Campbell suggests that it is likely that the higher scoring students would tend to go to the more competitive colleges, and thus the pooled relationship between SAT and GPA would be severely attenuated. The results of this study are consistent with Campbell's argument and demonstrate the artifacts which can be expected when diverse colleges are combined for predictive studies. When all black students were combined--whatever the college attended--the apparent predictive validity of the NMSQT was zero. However, when the relationship was examined for groups of relatively similar colleges, significant correlations emerged.

In the language of decision theory, this study has increased the bandwidth or generality of the research questions at the cost of decreasing the fidelity or precision of results. In attempting to encompass nearly all of the nation's four-year colleges with five regression equations, the accuracy of prediction is diminished somewhat relative to the predictive accuracy which can be achieved for individual colleges. Nevertheless, this approach seems to be the kind needed for exploratory thinking by the student and his college admissions counselor. With broadening of educational opportunity many black students now can consider attendance at a diverse national spectrum of colleges. Further validated data of the kind reported here should be useful for a student making a preliminary survey of the national scene. Given his particular level of educational development, does he wish to attend a college with rigorous competition and grading where he is likely to receive grades of C, or does he want to attend a less competitive college where he is more likely to earn B's? Having considered the actuarial predictive information, the student's choice will be a uniquely individual one, depending on his preference for other factors, including characteristics of the college such as cost, location, and prestige, as well as his tolerance for risk-taking (cf., Novick and Jackson, 1970).

The five college groupings used here partially simplify the diversity among colleges, but, as Hoyt (1968) suggests, refinement of college classifications no doubt would enhance the usefulness of national predictive equations for homogeneous groups of colleges. One research step in this direction might be the more precise measurement of the selectivity levels of the nation's black colleges, which currently enroll about one-half of all black college students.

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